especially in those for the direction of the wind at a single hour, the agreement of the final result with Dr. Buys-Ballot's mean (obtained probably in the same way), and that found here by a wholly different method, is very satisfactory.

One of the most interesting parts of Mr. Clement Ley's paper is the confirmation given, by so zealous and accurate an observer, of the results relating to the different directions of the aerial currents discovered by me upwards of thirty years ago. The author remarks,—"From many thousands of observations made at well-exposed situations in the Midland Counties of England, I have found that in about seven cases out of eight, with a light air or moderate wind, if the observer *exactly face* the wind on the earth's surface, he finds the current in clouds of no great altitude overhead to be a little *from* his *right*. This difference, it may be remarked, is commonly greatest and most uniformly noticed in dull or rainy weather with S.W. or S.E. winds"[*].

That is to say,

$$\psi - \phi \text{ is } \textit{positive},$$

and most so in the south quadrants. These results are in exact conformity with those obtained from the Makerstoun observations[†].

Mr. Clement Ley also finds the difference of direction between the isobars and wind to be greatest in the south quadrants (a result which I had proposed to examine specially, p. 538); but he does not seem to have remarked the important fact of the coincidence in the increase of $\theta - \phi$ and $\psi - \phi$. I recommend Mr. Clement Ley's instructive paper to the attention of meteorologists.

II. "The Meteorology of the Bombay Presidency." By Charles Chambers, F.R.S., Superintendent of the Colába Observatory. Received January 2, 1877.

(Abstract.)

This work consists of four parts—the first dealing with registrations of meteorological phenomena at the Colába Observatory during a period of twenty-seven years; the second with moderately full observations at five military stations in the Bombay Presidency during a period of nineteen years; and the third with large numbers of observations from civil hospitals and revenue stations, being those of selected registers extending over various periods from not less than a fortnight up to a number of years: in this part the phenomena treated are temperature of the air, winds, and rainfall only; and the extent of territory to which the observations refer includes the whole of the Presidency, Sind, and the western

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[*] Journal of the Scottish Meteorological Society, July 1873, p. 70.

[†] "Results of Makerstoun Observations," Trans. Roy. Soc. Edinb. 1843 to 1846, pp. ciii, civ.

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half of Rajputána. In the fourth part are discussed the general distribution (as regards both space and season) of temperature and rainfall, and the variations of the wind; first with respect simply to the physical geography of the country, and then in combination with certain theoretical views, the elucidation of which, by means of the dynamical theory of heat and the kinetic theory of gases, occupies much space.

Nearly half the memoir is devoted to the work of the Colába Observatory, of the history of which a short sketch is given. The design of this part is to give a compendious account of the results of a long and continuous maintenance of the Observatory, both in the shape of numerical determinations of meteorological elements and of their periodical and other variations, and in throwing light by means of these upon the physical conditions and actions which give rise to the observed relations between different phenomena, and to the variation of these relations with time.

In the course of the work the author introduces several new modes of picturing clearly to the mind, and of representing graphically, the general results of the various phenomena observed: he also develops a theory of aerial circulation, including a dynamical theory of convection-currents, which is original, and, so far as he knows, put forth now for the first time.

February 8, 1877.

Dr. GUY, Vice-President, in the Chair.

The Presents received were laid on the table, and thanks ordered for them.

The following Papers were read:—

I. "On the Hindoo Division of the Octave, with some additions to the Theory of the Higher Orders." By R. H. M. Bosanquet, Fellow of St. John's College, Oxford. Communicated by Prof. Henry J. S. Smith, Savilian Professor of Geometry in the University of Oxford. Received January 5, 1877.

(Abstract.)

Attention has been recently directed to the remarkable division of the octave into 22 intervals, employed by the Hindoos. The paper commences with a slight account of the Hindoo scales as thus derived. It is